APPENDIX U

Cancer Rate Analysis in Shoshone County

COUNTY PROFILES

A fact sheet from the Cancer Data Registry of Idaho, Idaho Hospital Association.

SHOSHONE COUNTY

Cancer Incidence 1993-1997
Cancer Mortality 1993-1997
BRFSS 1989-1998

CANCER

Cancer is a group of more than 100 different diseases, each characterized by uncontrolled growth and spread of abnormal cells. Cancer risk increases with age, and varies by gender and race. As the average age of the population increases, the incidence of cancer will increase as well.

It is generally accepted that 65-80% of all cancers are related to personal lifestyle or environmental factors, such as smoking and diet, and are therefore preventable. Other factors such as age, gender, and family history of specific cancer are also associated with cancer and aid in the identification of people at high risk.

For some cancers, effective treatment is available. For these cancers, early detection saves lives. For example, early detection of breast cancer in women 50 years of age and older has decreased breast cancer mortality by 30%. These patterns indicate opportunities for disease control and for reducing the number of cancer deaths through prevention, early detection, and treatment of the disease. Access to detection services is a key consideration.

RISK FACTORS AND INTERVENTIONS

Aging: Because the population is aging, the number of new cancer cases and cancer deaths that occur each year will continue to increase unless the trend is reversed by significant improvements in prevention, early detection, and treatment.

Smoking: Smoking and the use of smokeless tobacco are responsible for the majority of all cancers of the lung, trachea, bronchus, larynx, pharynx, oral cavity, and esophagus. Smoking is the leading cause of preventable death in the United States.

Diet: The U.S. Department of Agriculture recommends the following dietary guidelines for managing a healthy diet: eat a variety of foods; maintain a healthy weight; choose a diet low in total fat with plenty of fruits, vegetables, and grain products; limit the use of sugar, salt, and sodium; and minimize alcoholic beverage consumption.

Screening: Early detection is extremely important for those cancers that can be cured and which can be discovered early. Breast cancer is a good example of this, as stage at diagnosis is the strongest predictor for survival from breast cancer.

FOR MORE INFORMATION

Cancer Data Registry of Idaho
802 West Bannock, Suite 500
P.O. Box 1278, Boise, ID 83701
208-338-5100 ext. 213

National Cancer Institute
Cancer Information Services
1-800-4CANCER

American Cancer Society
2676 South Vista Avenue,
Boise, ID 83705
(208) 343-4609

CANCER INCIDENCE 1993-1997

During the five-year period 1993-1997, 26,046 cases of cancer were diagnosed among residents of the state of Idaho, 505 among Shoshone County residents. It is estimated that four in ten Idahoans will develop cancer during their lifetime.

Cancer Incidence 1993-1997	Shoshone County	State of Idaho
All Sites/Types	505	26,046
Prostate	65	3,823
Female Breast	62	3,365
Lung	98	2,936
Colon	33	1,750

The table, *CANCER INCIDENCE 1993-1997, COMPARISON BETWEEN SHOSHONE COUNTY AND THE REMAINDER OF THE STATE OF IDAHO,* shows for Shoshone County the number of observed cases, person-years, crude rates, age and sex-adjusted rates, expected number of cases based upon age and sex-specific rates in the remainder of Idaho, and p-values for tests comparing the number of observed and expected cases. The table also shows the number of observed cases, person-years, and crude rates for the remainder of the state of Idaho. Comparisons were made for all cancers combined, and 24 specific cancer types. Separate comparisons for males, females, and both sexes combined are included.

As the table shows, the crude rate of cancer incidence in Shoshone County was 723.5 cases per 100,000 person-years for the years 1993-1997. Compared with the crude incidence rate for the remainder of Idaho (445.4), this gives an estimate of the burden of disease in Shoshone County.

The age- and sex-adjusted incidence rate of invasive cancer in Shoshone County, all sites combined, was 555.7 cases per 100,000 persons per year for the years 1993-1997. There were statistically significantly more cases of cancer in Shoshone County (505) than expected (405) based upon rates in the remainder of the state ($p<.001$).

There are many reasons why cancer incidence rates differ by county, related to smoking, other personal behaviors, socioeconomic status, and other factors. For some cancers, such as breast cancer, incidence rates are higher in areas with higher rates of cancer screening.

CANCER MORTALITY 1993-1997

Cancer is the second leading cause of deaths in Idaho and in the United States. From 1993-1997, 9,783 persons in Idaho died from cancer, 208 in Shoshone County. The majority of cancer deaths are from four sites: lung, colon, prostate, and female breast.

Mortality 1993-1997	Shoshone County	State of Idaho
All Deaths	884	42,865
Cancer Deaths % of All Deaths	208 23.5%	9,783 22.8%
Lung	74	2,474
Colon	10	804
Prostate	12	789
Female Breast	16	783

The table, *CANCER MORTALITY 1993-1997, COMPARISON BETWEEN SHOSHONE COUNTY AND THE REMAINDER OF THE STATE OF IDAHO,* shows for Shoshone County the number of observed deaths, person-years, crude rates, age and sex-adjusted rates, expected number of deaths based upon age and sex-specific rates in the remainder of Idaho, and p-values for tests comparing the number of observed and expected cases. The table also shows the number of observed deaths, person-years, and crude rates for the remainder of the state of Idaho. Comparisons were made for all deaths, all cancer deaths, and 22 specific cancer types. Separate comparisons for males, females, and both sexes combined are included.

The age- and sex-adjusted cancer mortality rate for Shoshone County, all sites combined, was 221.9 deaths per 100,000 persons per year for the years 1993-1997, compared with 167.0 for the remainder of the state. There were statistically significantly more deaths from cancer in Shoshone County (208) than expected (157) based upon rates in the remainder of the state ($p<.001$).

Statistical Note: Rates and percentages based upon 10 or fewer cases or deaths (numerator) should be interpreted with caution.
Data Note: Mortality data may differ slightly from published official statistics from the Center for Vital Statistics and Health Policy.

CANCER INCIDENCE 1993-1997
COMPARISON BETWEEN SHOSHONE COUNTY AND THE REMAINDER OF THE STATE OF IDAHO

Cancer Site/Type	Sex	Shoshone County						Remainder of Idaho		
		Observed Cases	Person Years	Crude Rate (1)	A.A.I. Rate (1,2)	Expected Cases (3)	P-Value (4)	Observed Cases	Person Years	Crude Rate (1)
All sites combined	Total	505	69,797	723.53	555.69	404.8	0.000 >>	25,541	5,734,062	445.43
All sites combined	Male	254	34,906	727.67	540.11	211.4	0.005 >>	12,878	2,864,948	449.50
All sites combined	Female	251	34,891	719.38	572.79	193.4	0.000 >>	12,663	2,869,114	441.36
Bladder	Total	27	69,797	38.68	28.26	18.1	0.061	1,089	5,734,062	18.99
Bladder	Male	17	34,906	48.70	35.33	14.4	0.558	857	2,864,948	29.91
Bladder	Female	10	34,891	28.66	21.53	3.8	0.011 >>	232	2,869,114	8.09
Brain	Total	1	69,797	1.43	1.22	5.3	0.065	367	5,734,062	6.40
Brain	Male	1	34,906	2.86	2.41	3.0	0.400	207	2,864,948	7.23
Brain	Female	-	34,891	-	-	2.3	0.207	160	2,869,114	5.58
Breast	Total	63	69,797	90.26	70.61	51.6	0.135	3,314	5,734,062	57.79
Breast	Male	1	34,906	2.86	2.13	0.2	0.330	11	2,864,948	0.38
Breast	Female	62	34,891	177.70	138.90	51.4	0.164	3,303	2,869,114	115.12
Cervix	Female	6	34,891	17.20	15.22	3.2	0.205	231	2,869,114	8.05
Colon	Total	33	69,797	47.28	34.75	28.4	0.438	1,717	5,734,062	29.94
Colon	Male	15	34,906	42.97	31.42	14.3	0.915	856	2,864,948	29.88
Colon	Female	18	34,891	51.59	38.12	14.2	0.370	861	2,869,114	30.01
Endometrium	Female	8	34,891	22.93	17.52	10.2	0.617	642	2,869,114	22.38
Esophagus	Total	6	69,797	8.60	6.32	3.2	0.214	194	5,734,062	3.38
Esophagus	Male	4	34,906	11.46	8.45	2.5	0.482	151	2,864,948	5.27
Esophagus	Female	2	34,891	5.73	4.16	0.7	0.326	43	2,869,114	1.50
Hodgkin"s Lymphoma	Total	5	69,797	7.16	6.81	1.9	0.096	152	5,734,062	2.65
Hodgkin"s Lymphoma	Male	3	34,906	8.59	8.20	1.1	0.183	83	2,864,948	2.90
Hodgkin"s Lymphoma	Female	2	34,891	5.73	5.43	0.9	0.445	69	2,869,114	2.40
Kidney and Renal Pelvis	Total	15	69,797	21.49	16.33	7.7	0.026 >>	483	5,734,062	8.42
Kidney and Renal Pelvis	Male	13	34,906	37.24	28.22	5.0	0.004 >>	312	2,864,948	10.89
Kidney and Renal Pelvis	Female	2	34,891	5.73	4.38	2.7	0.978	171	2,869,114	5.96
Larynx	Total	5	69,797	7.16	5.25	2.9	0.333	174	5,734,062	3.03
Larynx	Male	2	34,906	5.73	4.16	2.4	1.000	142	2,864,948	4.96
Larynx	Female	3	34,891	8.60	6.61	0.5	0.030 >>	32	2,869,114	1.12
Leukemia	Total	9	69,797	12.89	10.28	9.9	0.934	650	5,734,062	11.34
Leukemia	Male	2	34,906	5.73	4.48	5.9	0.130	381	2,864,948	13.30
Leukemia	Female	7	34,891	20.06	16.42	4.0	0.221	269	2,869,114	9.38
Liver	Total	4	69,797	5.73	4.43	1.8	0.226	116	5,734,062	2.02
Liver	Male	3	34,906	8.59	6.72	1.1	0.195	70	2,864,948	2.44
Liver	Female	1	34,891	2.87	2.18	0.7	1.000	46	2,869,114	1.60
Lung and Bronchus	Total	98	69,797	140.41	102.28	47.4	0.000 >>	2,838	5,734,062	49.49
Lung and Bronchus	Male	54	34,906	154.70	111.28	29.1	0.000 >>	1,718	2,864,948	59.97
Lung and Bronchus	Female	44	34,891	126.11	93.73	18.3	0.000 >>	1,120	2,869,114	39.04
Melanoma of the Skin	Total	12	69,797	17.19	14.12	14.2	0.678	958	5,734,062	16.71
Melanoma of the Skin	Male	4	34,906	11.46	9.16	8.2	0.176	539	2,864,948	18.81
Melanoma of the Skin	Female	8	34,891	22.93	19.52	6.0	0.508	419	2,869,114	14.60
Multiple Myeloma	Total	7	69,797	10.03	7.40	4.1	0.252	251	5,734,062	4.38
Multiple Myeloma	Male	3	34,906	8.59	6.32	2.3	0.793	137	2,864,948	4.78
Multiple Myeloma	Female	4	34,891	11.46	8.50	1.9	0.241	114	2,869,114	3.97
Non-Hodgkin"s Lymphoma	Total	17	69,797	24.36	18.85	14.7	0.621	937	5,734,062	16.34
Non-Hodgkin"s Lymphoma	Male	11	34,906	31.51	24.54	7.7	0.316	494	2,864,948	17.24
Non-Hodgkin"s Lymphoma	Female	6	34,891	17.20	13.22	7.0	0.897	443	2,869,114	15.44
Oral Cavity and Pharynx	Total	8	69,797	11.46	8.73	9.9	0.686	620	5,734,062	10.81
Oral Cavity and Pharynx	Male	5	34,906	14.32	10.80	7.3	0.530	451	2,864,948	15.74
Oral Cavity and Pharynx	Female	3	34,891	8.60	6.75	2.6	0.973	169	2,869,114	5.89
Ovary	Female	6	34,891	17.20	13.73	7.1	0.871	466	2,869,114	16.24
Pancreas	Total	11	69,797	15.76	11.58	7.7	0.309	464	5,734,062	8.09
Pancreas	Male	7	34,906	20.05	14.54	4.2	0.257	248	2,864,948	8.66
Pancreas	Female	4	34,891	11.46	8.55	3.5	0.936	216	2,869,114	7.53
Prostate	Male	65	34,906	186.21	132.62	64.3	0.963	3,758	2,864,948	131.17
Rectum & Rectosigmoid	Total	21	69,797	30.09	22.32	11.1	0.011 >>	678	5,734,062	11.82
Rectum & Rectosigmoid	Male	16	34,906	45.84	33.82	6.7	0.003 >>	403	2,864,948	14.07
Rectum & Rectosigmoid	Female	5	34,891	14.33	10.72	4.5	0.924	275	2,869,114	9.58
Stomach	Total	5	69,797	7.16	5.37	5.3	1.000	324	5,734,062	5.65
Stomach	Male	3	34,906	8.59	6.43	3.4	1.000	210	2,864,948	7.33
Stomach	Female	2	34,891	5.73	4.32	1.8	1.000	114	2,869,114	3.97
Testis	Male	3	34,906	8.59	9.20	1.8	0.551	160	2,864,948	5.58
Thyroid	Total	2	69,797	2.87	2.62	4.4	0.375	329	5,734,062	5.74
Thyroid	Male	-	34,906	-	-	1.1	0.675	79	2,864,948	2.76
Thyroid	Female	2	34,891	5.73	5.29	3.3	0.721	250	2,869,114	8.71

Notes: 1. Rates are expressed as the number of cases per 100,000 persons per year (person-years).

2. Age and sex-adjusted incidence (A.A.I.) rates for county used age and sex-specific crude rates for the remainder of the state as standard.

3. Expected cases are based upon age and sex-specific rates for the remainder of the state of Idaho (compare to observed).

4. P-values compare observed and expected cases, are two tailed, based upon the Poisson probability distribution.

"<<" denotes significantly fewer cases observed than expected, ">>" denotes significantly more cases observed than expected (p=.05).

Statistical Note: Rates based upon 10 or fewer cases (numerator) should be interpreted with caution.

CANCER MORTALITY 1993-1997
COMPARISON BETWEEN SHOSHONE COUNTY AND THE REMAINDER OF THE STATE OF IDAHO

Cause of Death Cancer Site/Type	Sex	Shoshone County						Remainder of Idaho		
		Observed Deaths	Person Years	Crude Rate (1)	A.A.M. Rate (1,2)	Expected Deaths (3)	P-Value (4)	Observed Deaths	Person Years	Crude Rate (1)
All Causes of Death	Total	884	69,797	1,266.53	973.54	664.8	0.000 >>	41,981	5,734,062	732.13
All Causes of Death	Male	460	34,906	1,317.83	1,014.57	350.3	0.000 >>	22,137	2,864,948	772.68
All Causes of Death	Female	424	34,891	1,215.21	932.55	314.5	0.000 >>	19,844	2,869,114	691.64
All Malignant Cancers	Total	208	69,797	298.01	221.85	156.6	0.000 >>	9,575	5,734,062	166.98
All Malignant Cancers	Male	103	34,906	295.08	217.26	86.9	0.101	5,254	2,864,948	183.39
All Malignant Cancers	Female	105	34,891	300.94	227.14	69.6	0.000 >>	4,321	2,869,114	150.60
Bladder	Total	8	69,797	11.46	8.44	3.7	0.071	224	5,734,062	3.91
Bladder	Male	2	34,906	5.73	4.18	2.7	1.000	160	2,864,948	5.58
Bladder	Female	6	34,891	17.20	12.98	1.0	0.001 >>	64	2,869,114	2.23
Brain	Total	1	69,797	1.43	1.15	4.4	0.138	286	5,734,062	4.99
Brain	Male	1	34,906	2.86	2.27	2.5	0.566	164	2,864,948	5.72
Brain	Female	-	34,891	-	-	1.8	0.321	122	2,869,114	4.25
Breast	Total	17	69,797	24.36	18.80	12.2	0.222	772	5,734,062	13.46
Breast	Male	1	34,906	2.86	2.06	0.1	0.162	5	2,864,948	0.17
Breast	Female	16	34,891	45.86	35.37	12.1	0.325	767	2,869,114	26.73
Cervix	Female	2	34,891	5.73	4.71	1.1	0.566	71	2,869,114	2.47
Colon	Total	10	69,797	14.33	10.58	13.1	0.489	794	5,734,062	13.85
Colon	Male	4	34,906	11.46	8.41	7.1	0.324	429	2,864,948	14.97
Colon	Female	6	34,891	17.20	12.80	6.0	1.000	365	2,869,114	12.72
Endometrium	Female	3	34,891	8.60	6.46	0.7	0.067	43	2,869,114	1.50
Esophagus	Total	8	69,797	11.46	8.44	3.5	0.055	213	5,734,062	3.71
Esophagus	Male	7	34,906	20.05	14.79	2.8	0.048 >>	169	2,864,948	5.90
Esophagus	Female	1	34,891	2.87	2.11	0.7	1.000	44	2,869,114	1.53
Hodgkin's Lymphoma	Total	-	69,797	-	-	0.4	1.000	27	5,734,062	0.47
Hodgkin's Lymphoma	Male	-	34,906	-	-	0.3	1.000	16	2,864,948	0.56
Hodgkin's Lymphoma	Female	-	34,891	-	-	0.2	1.000	11	2,869,114	0.38
Kidney and Renal Pelvis	Total	4	69,797	5.73	4.24	3.8	1.000	229	5,734,062	3.99
Kidney and Renal Pelvis	Male	3	34,906	8.59	6.35	2.8	1.000	169	2,864,948	5.90
Kidney and Renal Pelvis	Female	1	34,891	2.87	2.13	1.0	1.000	60	2,869,114	2.09
Larynx	Total	2	69,797	2.87	2.06	1.0	0.503	57	5,734,062	0.99
Larynx	Male	1	34,906	2.86	2.06	0.7	1.000	41	2,864,948	1.43
Larynx	Female	1	34,891	2.87	2.06	0.3	0.475	16	2,869,114	0.56
Leukemia	Total	3	69,797	4.30	3.28	6.6	0.206	416	5,734,062	7.25
Leukemia	Male	1	34,906	2.86	2.16	4.0	0.186	246	2,864,948	8.59
Leukemia	Female	2	34,891	5.73	4.47	2.7	1.000	170	2,869,114	5.93
Liver and I/H Bile Duct	Total	3	69,797	4.30	3.19	2.2	0.764	135	5,734,062	2.35
Liver and I/H Bile Duct	Male	2	34,906	5.73	4.24	1.3	0.712	76	2,864,948	2.65
Liver and I/H Bile Duct	Female	1	34,891	2.87	2.13	1.0	1.000	59	2,869,114	2.06
Lung and Bronchus	Total	74	69,797	106.02	76.99	40.2	0.000 >>	2,400	5,734,062	41.86
Lung and Bronchus	Male	36	34,906	103.13	74.21	25.0	0.044 >>	1,474	2,864,948	51.45
Lung and Bronchus	Female	38	34,891	108.91	80.31	15.3	0.000 >>	926	2,869,114	32.27
Melanoma of the Skin	Total	1	69,797	1.43	1.12	2.5	0.580	160	5,734,062	2.79
Melanoma of the Skin	Male	1	34,906	2.86	2.27	1.7	1.000	109	2,864,948	3.80
Melanoma of the Skin	Female	-	34,891	-	-	0.8	0.892	51	2,869,114	1.78
Multiple Myeloma	Total	4	69,797	5.73	4.22	3.6	0.963	217	5,734,062	3.78
Multiple Myeloma	Male	2	34,906	5.73	4.23	1.9	1.000	114	2,864,948	3.98
Multiple Myeloma	Female	2	34,891	5.73	4.22	1.7	1.000	103	2,869,114	3.59
Non-Hodgkin's Lymphoma	Total	8	69,797	11.46	8.59	7.3	0.880	447	5,734,062	7.80
Non-Hodgkin's Lymphoma	Male	4	34,906	11.46	8.58	4.1	1.000	249	2,864,948	8.69
Non-Hodgkin's Lymphoma	Female	4	34,891	11.46	8.60	3.2	0.800	198	2,869,114	6.90
Oral Cavity and Pharynx	Total	1	69,797	1.43	1.06	2.3	0.664	139	5,734,062	2.42
Oral Cavity and Pharynx	Male	1	34,906	2.86	2.08	1.5	1.000	89	2,864,948	3.11
Oral Cavity and Pharynx	Female	-	34,891	-	-	0.8	0.898	50	2,869,114	1.74
Ovary	Female	5	34,891	14.33	10.74	4.7	1.000	288	2,869,114	10.04
Pancreas	Total	12	69,797	17.19	12.62	7.7	0.178	462	5,734,062	8.06
Pancreas	Male	9	34,906	25.78	18.77	4.2	0.054	249	2,864,948	8.69
Pancreas	Female	3	34,891	8.60	6.37	3.5	1.000	213	2,869,114	7.42
Prostate	Male	12	34,906	34.38	25.21	12.9	0.946	777	2,864,948	27.12
Rectum and Rectosigmoid	Total	4	69,797	5.73	4.30	2.4	0.450	149	5,734,062	2.60
Rectum and Rectosigmoid	Male	3	34,906	8.59	6.43	1.3	0.265	77	2,864,948	2.69
Rectum and Rectosigmoid	Female	1	34,891	2.87	2.16	1.2	1.000	72	2,869,114	2.51
Stomach	Total	4	69,797	5.73	4.28	3.1	0.763	192	5,734,062	3.35
Stomach	Male	2	34,906	5.73	4.29	1.9	1.000	115	2,864,948	4.01
Stomach	Female	2	34,891	5.73	4.26	1.3	0.717	77	2,869,114	2.68

Notes: 1. Rates are expressed as the number of cases per 100,000 persons per year (person-years).
2. Age and sex-adjusted mortality (A.A.M.) rates for county used age and sex-specific crude rates for the remainder of the state as standard.
3. Expected cases are based upon age and sex-specific rates for the remainder of the state of Idaho (compare to observed).
4. P-values compare observed and expected cases, are two tailed, based upon the Poisson probability distribution.
"<<" denotes significantly fewer cases observed than expected, ">>" denotes significantly more cases observed than expected (p=.05).

Statistical Notes: Rates based upon 10 or fewer cases (numerator) should be interpreted with caution.
Mortality statistics presented differ from CVSHP official statistics due to differences in methodology.

Data Source: Center for Vital Statistics and Health Policy (CVSHP), Division of Health, Idaho Department of Health and Welfare, 7/99.

Cancer Risk Factors and Screening: Behavioral Risk Factor Surveillance System (BRFSS)

The Center for Vital Statistics and Health Policy (CVSHP), Division of Health, Idaho Department of Health and Welfare, under a cooperative agreement with the Centers for Disease Control and Prevention, has conducted telephone Behavioral Risk Factor Surveys since 1984 of random samples of adult Idahoans to measure population prevalences of risk factors for the major causes of death - including cancer. The CVSHP provided a data set containing aggregated BRFSS data from 1989 through 1998 to CDRI staff, who performed the analyses descibed in these *County Profiles*. Data were weighted by probability of selection, and poststratified to 1997 Idaho population estimates by age group, sex, and health district. A minimum of 30 respondents was required to generate county-level statistics.

BRFSS: Cancer Risk Factors and Screening Prevalence Estimates, 1989-1998

Residence	BRFS Respondents	Clinical Breast Exam	Mammogram	Pap Test	Smoking Current	Smoking Ever	Use Smokeless Tobacco Ever
State of Idaho	25,973	75.8%	62.9%	77.5%	20.5%	44.6%	20.8%
Health District 1	3,561	76.4%	63.2%	78.2%	24.5%	53.9%	21.4%
Health District 2	2,819	78.3%	68.0%	79.6%	19.7%	46.2%	26.8%
Health District 3	3,568	73.3%	59.8%	75.7%	21.3%	44.6%	19.2%
Health District 4	5,601	80.2%	68.9%	81.6%	21.5%	46.7%	21.8%
Health District 5	3,469	72.6%	60.8%	74.4%	19.3%	43.4%	20.6%
Health District 6	3,528	74.5%	54.4%	76.5%	19.4%	38.0%	18.9%
Health District 7	3,432	71.1%	62.0%	73.2%	15.3%	35.2%	17.4%
SHOSHONE	442	69.3%	54.4%	74.2%	29.4%	55.6%	30.5%

Clinical Breast Exam (CBE) - 1990 to 1998
Statewide, 75.8% of women aged 18 and older reported having a CBE in the past 2 years. Screening differed significantly by race/ethnicity, with 76.0% of white non-Hispanic women, compared to 72.0% of women of other racial and ethnic backgrounds, reporting having a CBE in the past 2 years. CBE utilization differed significantly by age of respondent, with 82.6% of women aged 25-34, but only 67.9% of women aged 65 and older, being screened. There was no trend by year of survey. CBE utilization differed significantly by county, with a range in screening of 58.2% (Madison County) to 88.3% (Blaine County). Results showed that women in counties with low rates of breast cancer may not be getting screened with CBE as well as women in other areas of Idaho.

Mammogram - 1989 to 1998
Statewide, 62.9% of women aged 50 and older reported having a mammogram in the past 2 years. Mammography utilization differed significantly by age of respondent, with 67.7% of women aged 50-54, and 60.4% of women aged 65 and older, being screened. There was no significant difference in screening by race/ethnicity. Mammography rates increased significantly over time, from 50.8% in 1989 to 69.4% in 1998. Mammography rates differed significantly by county, with a range in screening of 44.5% (Custer County) to 78.9% (Blaine County). Results showed that women in counties with low rates of early stage breast cancer may not be getting screened with mammograms as well as women in other areas of Idaho.

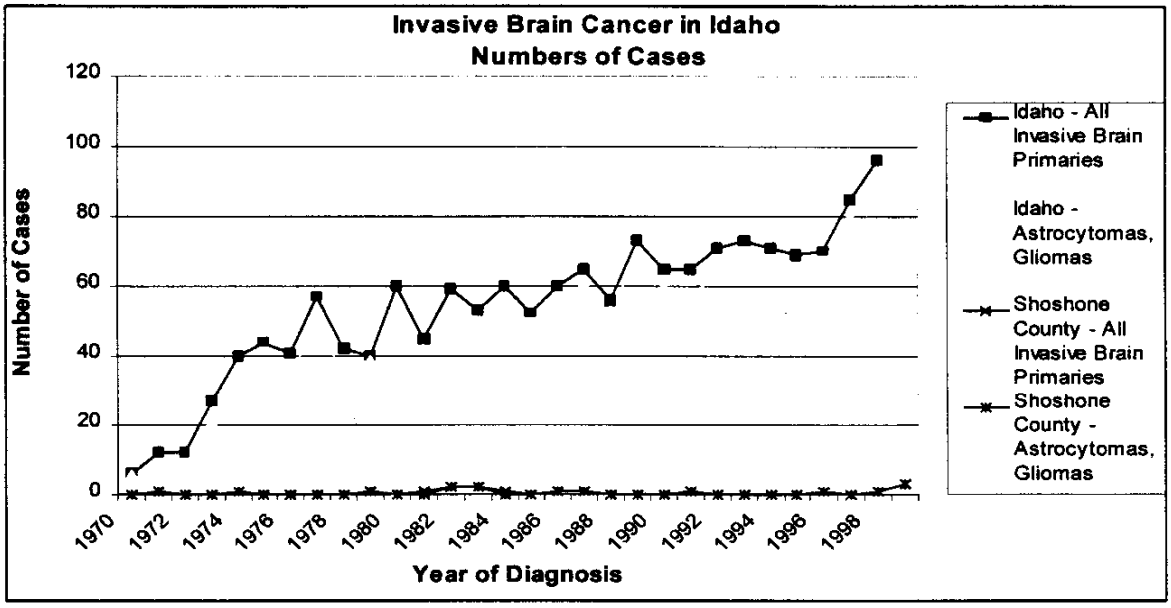
Pap Test - 1989 to 1998 (except 1990)
Statewide, 77.5% of women aged 18 and older (with intact cervix) reported having a pap test in the past 2 years. Pap screening differed significantly by age of respondent, with 86.8% of women aged 25-34, but only 59.3% of women aged 65 and older, screened in the past 2 years. Pap screening did not differ significantly by race/ethnicity, and there was no trend by year of survey. Pap screening differed significantly by county, with a range of 53.6% (Madison County) to 94.2% (Teton County).

Current Smoking - 1989 to 1998
Statewide, 20.5% of adults aged 18 and older were current smokers. Smoking prevalence differed significantly by age of respondent, with 24.2% of persons aged 35-44, and 10.7% of persons aged 65 and older, reporting current smoking. Twenty-two percent of males (21.8%) and 19.2% of females were current smokers, and smoking prevalence was lower among white non-Hispanics (20.3%) than among other race/ethnic groups (24.5%). There was no trend by year of survey. Smoking prevalence differed significantly by county, with a range of 5.2% (Madison County) to 29.4% (Shoshone County). Results showed that counties with higher rates of current smoking have higher rates of lung cancer.

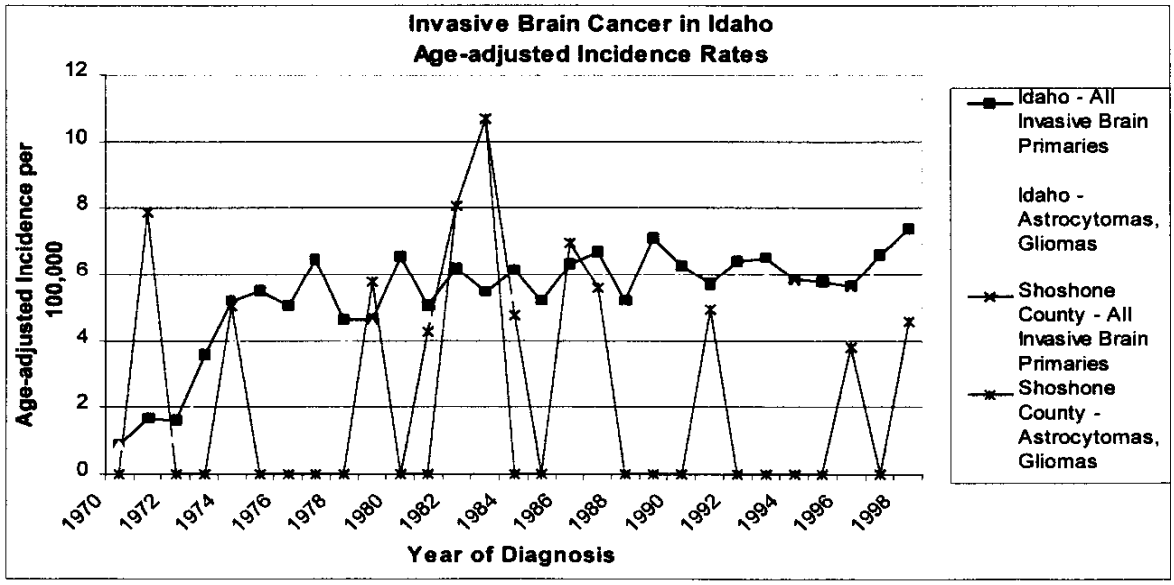
Smokeless Tobacco Use - 1992 to 1998 (except 1997)
Statewide, 20.8% of adults aged 18 and older ever used smokeless tobacco. Smokeless tobacco use differed significantly by age group, ranging from 30.6% of persons aged 18-24 to 10.8% of persons aged 65 and older. Thirty-eight percent of males (37.9%) and 4.2% of females ever used smokeless tobacco. There was no difference in smokeless tobacco use by race/ethnicity or year of survey. Ever using smokeless tobacco differed by county, with a range of 10.2% (Washington County) to 34.1% (Boise County). Results showed that counties with higher rates of smokeless tobacco use have higher rates of cancer of the oral cavity and pharynx.

Brain Cancer in Shoshone County

From 1970-1998, there were 1,569 cases of invasive brain cancer diagnosed among Idaho residents, 1,402 (89%) of which were astrocytoma/glioma. During this same time period, there were 14 cases of invasive brain cancer diagnosed among Shoshone County residents, 12 (86%) of which were astrocytoma/glioma (three additional cases have been diagnosed in 1999-2000). The graph below shows the numbers of cases by year of diagnosis for Shoshone County and Idaho.



During this time period, the average age-adjusted rates of invasive brain cancer and astrocytoma/glioma in the State of Idaho were 5.6 and 5.0 per 100,000, respectively. The rates in Shoshone County were less than half this, at 2.5 and 2.2 per 100,000.



From 1970-2000, the number of invasive brain cancer cases per year in Shoshone County has vacillated from 0-2, with 0 cases in 17 of the years, 1 case in 11 of the years, and 2 cases in each of three years. Given the average number of cases of 0.55 per year, there would need to be 3 or more cases in one calendar year for the count to be statistically significantly different from the county average. To date, this has not occurred. In addition, the Scan Test, a test of clustering for a single time series, has not revealed a time cluster with these data. The table below shows the numbers of cases of brain cancer that would need to occur in a calendar year for the resulting count to be statistically significant at the given p-value. Counts of three and higher have p-values less than 0.05, which would be considered to be statistically significantly different from the average number of cases expected.

SHOSHONE COUNTY BRAIN CANCER CASE COUNTS AND P-VALUES

CASES EXPECTED	COUNT	P VALUE
0.55	0	1.00000
0.55	1	0.84610
0.55	2	0.21146
0.55	3	0.03693
0.55	4	0.00493
0.55	5	0.00053
0.55	6	0.00005
0.55	7	0.00000
0.55	8	0.00000
0.55	9	0.00000
0.55	10	0.00000

Conclusion:

The incidence of brain cancer in Shoshone County has historically been lower than expected based upon rates in the remainder of Idaho. The new cases reported to date for diagnoses in 1999 and 2000 do not represent a statistical cluster in time. The incidence of brain cancer in Shoshone County is not higher than expected, but does warrant periodic reanalysis.

CANCER CLUSTER FACT SHEET

Cancer is a term that includes more than 100 different diseases, each characterized by the uncontrolled growth and spread of abnormal cells. A **CANCER CLUSTER** is the occurrence of a greater than expected number of cases of cancer within a small area or within a short period of time.

Cancer is one of America's greatest public health concerns. Four in ten persons in the United States will be diagnosed with cancer sometime in their life. Cancer is the second leading cause of death in both the United States and Idaho. In Idaho, cancer accounted for over 23 percent of deaths in 1998. When someone is diagnosed with or dies from cancer, family, friends and neighbors sometimes learn of other cases of cancer in their community. This apparent clustering of cancers is often reported to health departments or the media. However, closer inspection usually reveals that these "suspected" clusters involve several different ages, sexes and occupations. These cancer cases often have little or nothing in common (for example, some may have recently moved into the area), and are therefore not a "real" cancer cluster.

When several cancers occur within a limited area, this may represent a real cluster, but it may not be the result of an increased community risk of cancer. For example, in Idaho there are 44 counties. Every year, about half of the counties have rates of cancer that are above the average county value, and about half have rates that are below the average value. Counties may have above average rates one year and the next year the same counties may have rates below the average. This variation in expected and is more pronounced as the population being studied gets smaller (county, city, ZIP Code, neighborhood). Investigations of hundreds of reports of cancer clusters over many years by numerous states have shown approximately 15 percent of reported cancer clusters to be real clusters, based upon statistical evidence.

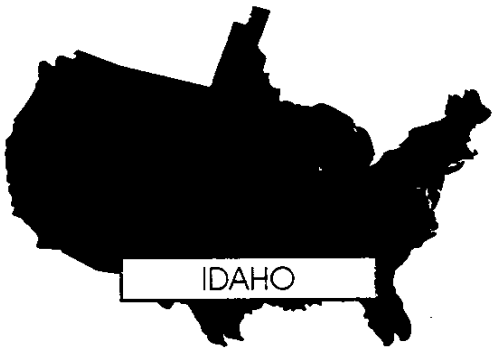
Cancer clusters that are a public health concern are the ones that represent a group of people who are at unusually high risk of cancer due to some factor or exposure that they have in common. A study of these clusters is sometimes necessary for the prevention of further cancers and to help understand more about specific risks for cancer. Understanding the reasons why the cancer risk is elevated may take months or longer, and the reasons are not always resolved. Less than 5 percent of all cluster reports fall into this category of "meaningful" cluster.

Cancer cluster investigations require data on the total number of residents and the number of diagnosed cancer cases in the area to be reviewed. At present time, the Cancer Data Registry of Idaho is able to investigate cancer incidence for several levels of geography: county, ZIP Code, Census Tract, and Census Block Group.

For more information regarding cancer clusters, contact:

Cancer Data Registry of Idaho
802 W. Bannock
Suite 500, PO Box 1278
Boise, Idaho 83701
(208) 338-5100 x213

Cancer Data Registry of Idaho



Your Source for Cancer Incidence and Survival Data for the State of Idaho

Cancer Data Registry of Idaho
P.O. Box 1278
Boise, ID 83701-1278
(208) 338-5100

CDRI
CANCER DATA REGISTRY OF IDAHO

CDRI

The Cancer Data Registry of Idaho (CDRI), a program of the Idaho Hospital Association (IHA), is a statewide cancer registry that collects incidence and survival data on all cancer patients who reside in the state of Idaho or who are diagnosed and/or treated for cancer in the state of Idaho. The goals of CDRI are to:

* determine the incidence of cancer in the state of Idaho with respect to geographic, demographic, and social characteristics;
* monitor trends and patterns of cancer incidence over time;
* identify high risk populations;
* provide a database and serve as a resource in conducting epidemiologic studies, and;
* provide data to assist public health officials, hospital administrators, and physicians to effectively plan services, prioritize health resource allocations and develop and measure prevention and intervention strategies

HISTORY AND FUNDING

The Idaho Hospital Association (IHA) contracts with the Idaho Department of Health and Welfare, Division of Health, to provide a statewide cancer surveillance system. CDRI was established in 1969 and became population-based in 1971. The Idaho State Legislature has provided guidelines for the establishment, requirements, and funding of the statewide cancer registry. The operations of the registry are mandated by Idaho Code 57-1703 through 57-1707. Funding is appropriated in Idaho Code 57-1701 and 63-2520 which delineates one percent of the cigarette tax to be dedicated to fund the statewide cancer registry. Additional funding has been awarded to CDRI from the Centers for Disease Control and Prevention with a federal grant (National Program of Cancer Registries).

CONFIDENTIALITY OF DATA

Idaho state law ensures the protection of confidential data and limits the release of identifying data. Only aggregate data are published. The same law protects report sources from liability for reporting data to CDRI.

COLLECTION OF DATA

Each Idaho hospital, out-patient surgery center, and pathology laboratory is responsible for the complete ascertainment of all data on cancer diagnoses and treatments provided in the facility within six months of diagnosis. Sources for identifying eligible cases include:

* hospitals,
* out-patient surgery centers,
* free-standing radiation centers,
* physicians,
* death certificates, and
* other state cancer registries reporting an Idaho resident with cancer (as negotiated).

When a cancer case is reported from more than one source the information is consolidated into one record.

REPORTABLE CASES

All in-situ or malignant neoplasms are reportable to CDRI. The database includes all cases of carcinoma, sarcoma, melanoma, lymphoma, and leukemia, diagnosed by histology/cytology, radiology, laboratory testing, clinical observation, and autopsy. Also reportable are benign tumors of the brain, meninges, pineal gland, and pituitary gland. Basal and squamous cell carcinomas of the skin are excluded except when occurring on a mucous membrane or if the stage group is II, III, or IV.

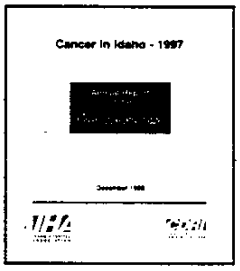
QUALITY ASSURANCE

To assure validity and reliability of data, CDRI uses software that checks the content of data fields against an encoded set of acceptable possible contents and flags the acceptability of coded data. Records are also routinely checked for duplicate entries.

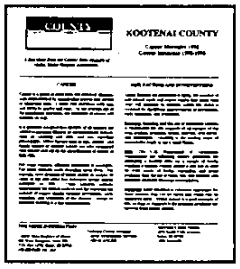
CDRI RESOURCES

Publications and More

You have access to an abundance of aggregate data through CDRI. You may request any of the following at no cost.

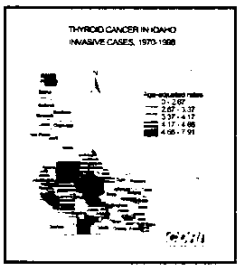


"Cancer in Idaho"
This annual publication contains summary data for one particular year on the most common 24 cancer types and all cancers combined. Data on cancer incidence and mortality are illustrated for the state as well as by health district. The publication contains statistics by cancer type, gender, and geographic area represented by stage of disease, age-adjusted incidence rates, age-specific rates, observed numbers of cases, and expected numbers of cases during the given year. Risk factors for each cancer type are also included.



"County Profiles"
These publications serve as fact sheets for each county in the state of Idaho. Each fact sheet contains incidence data for a five-year time period and mortality data for a one-year time period. Facts regarding risk factors and interventions as well as county-specific data by cancer type and gender are included. Data included are observed cases, crude rates, age-adjusted incidence rates, expected cases, and p-values; and, for comparison, observed cases and crude rates for the remainder of the state of Idaho. Mortality data are presented for each county compared with the state of Idaho.

"Data on the Web"
You are invited to visit our web site at:
HTTP://WWW.IDCANCER.ORG
Connecting with CDRI has never been easier than through our Web site. When you are online with CDRI, you have access to a wealth of resources including annual reports, background data on the cancer registry, our most recent special reports and common links to other useful Web sites.



"Special Reports"
Many reports are available for specific types of cancer such as breast cancer, thyroid cancer, or pediatric cancer. Special reports usually contain greater statistical and geographic detail.

"Cancer Cluster Fact Sheet"
This one page fact sheet defines a "cancer cluster" and how CDRI handles requests to conduct cancer cluster investigations.

Other Types of Data Analysis
If the listed publications do not meet your data needs, CDRI can perform data analysis specific to your needs. Just call a CDRI staff person and together we can design a report helpful to you.

HOSPITAL SERVICES

As a program of the Idaho Hospital Association, CDRI provides services to hospitals to help them comply with cancer reporting laws. The following services are provided:

- annual follow-up of cancer patients through physicians
- computerized monthly updates to hospital cancer registry database
- educational workshops for hospital cancer registrars
- on-site training of new registrars
- computer software training and on-going support
- video library for continuing education
- abstracting service to assist with backlog
- access to abstracting consultants for facilities with small caseloads
- quarterly newsletter to cancer registrars
- quality control of submitted data and feedback on error rates
- current documentation on minimum data set and data dictionary and abstracting procedures
- cancer data provided to assist with patient care evaluation studies, facility-specific annual reports, planning services, and evaluating early prevention and intervention strategies among served populations
- research of technical questions

RESOURCES

When you need cancer data, use this quick directory to contact CDRI, knowing your request will receive a timely and thoughtful response.

Address
Cancer Data Registry of Idaho
802 W. Bannock Street, Suite 500
P.O. Box 1278
Boise, ID 83701-1278

Phone
(208) 338-5100

FAX
(208) 338-7800

Web Site Address
http://www.idcancer.org

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